

ENVIRONMENTAL PROTECTION

I. OVERVIEW

The fourth major program in the State program structure is Environmental Protection. The program's overall objective is to restore, protect, and enhance, where appropriate, the natural and man-made physical environment.

The Environmental Protection Program is comprised of three Level II sub-programs. These sub-programs are distinguished by the uniqueness of their activities and objectives. They are Pollution Control, Preservation and Enhancement, and General Support for Natural Physical Environment.

Environmental Protection includes a total of nine individual, lowest-level active programs. The organizational entities involved in this program are the Departments of Health (DOH), Land and Natural Resources (DLNR), and Agriculture (DOA).

Both the federal and State governments are continuously placing added emphasis on the prevention of environmental degradation, pollution abatement and conservation of biological diversity. Consequently, greater attention must be given to environmental considerations in planning processes by both the public and private sectors. This calls for closer coordination among federal, State, and county agencies in general planning, project planning, systems planning, and capital improvements.

The activities performed under this program can be separated into three distinct categories. They are:

1. Pollution abatement and regulation
 - a. Source inspections and investigations
 - b. Issuance of permits and variances
 - c. Registration of pesticides
 - d. Compliance monitoring
2. Environmental preservation, conservation, and management
 - a. Designation of wildlife refuges, natural area reserves and marine sanctuaries
 - b. Management of use and other impacts on resource values with regulations, public information and education, and other means
 - c. Forest protection and management (control of fire, noxious plants and forest pests and disease)
 - d. Erosion control
 - e. Protection of mineral reserves
 - f. Watershed protection

- g. Beach improvement, protection and restoration
- h. Restoration of threatened and endangered plants and animals
- i. Protection and management of natural area reserves, wildlife sanctuaries and marine sanctuaries

3. Administration and policy-making

Table I-1, following, illustrates the capital investment and operating costs of the Environmental Protection Program.

Further discussions of activities, costs, and effectiveness will be covered in Section II.

TABLE I-1
INVESTMENT AND OPERATING COSTS AND MEASURES OF EFFECTIVENESS/ACTIVITY
ENVIRONMENTAL PROTECTION

	F i s c a l Y e a r s							
	<u>Actual</u> <u>2003-04</u>	<u>Est.</u> <u>2004-05</u>	<u>Rec.</u> <u>2005-06</u>	<u>Rec.</u> <u>2006-07</u>	<u>2007-08</u>	<u>P r o j e c t e d</u>		
						<u>2008-09</u>	<u>2009-10</u>	<u>2010-11</u>
A. <u>Costs of the Recommended Program</u> ^{A/}								
Capital Investment	23.9	26.9	28.3	24.3	...	...	...	...
Operating	157.7	185.4	218.2	218.2	218.2	218.2	218.2	218.2
Total	181.6	212.3	246.5	242.5	218.2	218.2	218.2	218.2
B. <u>Selected Measures of Effectiveness/</u> <u>Activity</u>								
1. % covered sources in compliance with air rules/permits.	88	90	90	90	90	90	90	90
2. % wastewater discharges in compliance with permits.	96	96	96	96	96	96	96	96
3. % marine recreation sites in compliance with rules.	100	100	100	100	100	100	100	100
4. % public drinking water system meeting State requirements.	97	92	92	92	92	92	92	92

^{A/} Expenditures in millions of dollars from all funds.

II. COSTS AND EFFECTIVENESS OF THE RECOMMENDED PROGRAMS

Environmental Health Administration

The object of the Level II program, Environmental Health Administration, is to formulate environmental policy, direct operations and personnel, and provide other administrative, planning, hazardous evaluation and emergency response services.

DOH runs the four lowest level programs, which comprise this Level II program. The programs are: Office of the Deputy Director, Environmental Resources, Environmental Planning, and Hazard Evaluation and Emergency Response.

The major activities in this program area are administration, planning, evaluation and surveillance of environmental hazards, as well as investigation and remediation of environmental contaminants under emergency and routine conditions. DOH has enhanced its ability to respond to chemical releases and oil spills. In particular, it has enhanced its capability to evaluate hazards to both public health and the environment through scientific risk assessment analyses. The department has also taken a leadership role in implementing the federal Brownfields Revitalization Act of 2003 by promoting the assessment, cleanup and redevelopment of underutilized and abandoned property in the State. In this regard, the department is also actively promoting the use of the Hawaii Voluntary Response Program, which has been very successful in encouraging the voluntary cleanup of contaminated property. Finally, the department is developing its capability to respond to acts of bioterrorism by participating in national training and assuming responsibilities under the State Incident Command Structure.

Office of Environmental Quality Control

The objective of the Level II program, Office of Environmental Quality Control (OEQC), is to assist in restoring, protecting and enhancing the natural physical environment of the State by stimulating, expanding and coordinating efforts of governmental agencies, industrial groups and citizens.

OEQC, through its Director, serves the Governor in an advisory capacity on all matters relating to environmental quality control. At the request of the Governor, OEQC coordinates State governmental agencies in matters concerning environmental quality. OEQC directs attention of the university, community and public to environmental problems and performs other related functions as specified in Chapter 341, HRS, and serves as a clearinghouse for environmental review documents prepared under Chapter 343, HRS.

OEQC reviews all environmental assessments and impact statements to assure compliance with Chapter 343, HRS, and Chapter 11-200, HAR: notifies the public of availability of all proposed environmental assessments and impact statements twice each month in the Environmental Notice (OEQC Bulletin) to facilitate the required public review; conducts workshops and provides technical assistance to agencies, private sector, interest groups, and the general public as requested to clarify requirements of Chapters 343 and 200; reviews and provides comments on proposed land use plans, projects, agency permits and approvals as requested; and provides support and guidance to the Environmental Council.

Table II-1 illustrates the capital investment and operating costs of the Pollution Control sub-program.

TABLE II-1
INVESTMENT AND OPERATING COSTS AND MEASURES OF EFFECTIVENESS/ACTIVITY
POLLUTION CONTROL

	F i s c a l Y e a r s							
	Actual 2003-04	Est. 2004-05	Rec. 2005-06	Rec. 2006-07	2007-08	P r o j e c t e d		
						2008-09	2009-10	2010-11
A. <u>Costs of the Recommended Program</u> ^{A/}								
Capital Investment	22.2	22.2	22.3	22.3	...	...	...	...
Operating	116.1	138.8	171.3	171.3	171.3	171.3	171.3	171.3
Total ^{B/}	138.3	161.0	193.6	193.6	171.3	171.3	171.3	171.3
B. <u>Selected Measures of Effectiveness/ Activity</u>								
1. % of spills responses/clean ups investigated.	28	30	30	30	30	30	30	30
2. % environmental assessments and environmental impact statements reviewed, published in OEQC Bulletin.	100	100	100	100	100	100	100	100

^{A/} Expenditures in millions of dollars from all funds.

Preservation and Enhancement

The objective of the Level II program, Preservation and Enhancement, is to preserve, enhance, and augment, where appropriate, the State's natural resources and unique natural environmental characteristics.

DLNR runs the four lowest-level programs which comprise this Level II program. The programs are: Aquatic Resources (LNR 401); Forest and Wildlife Resources (LNR 402); Water Resources (LNR 404); and Conservation and Resources Enforcement (LNR 405).

Major activities of the Preservation and Enhancement sub-program include:

- Managing use and other impacts on value of aquatic resources.
- Administration for three statewide fisheries programs.
- Administering federal aid grants worth roughly \$4 million in annual revenues to the State.
- Designation and management of wildlife, plant and marine sanctuaries, natural area reserves and surveillance of selected coastal areas.
- Forest fire suppression.
- Erosion control.
- Noxious plant control.
- Non-native animal control.
- Predator control.
- Endangered plant and animal propagation and restoration.
- Groundwater and watershed protection.
- Improvement and restoration of beach frontage.
- Enforcement of laws and rules relating to protecting and enhancing the resources.
- Providing educational activities and information on resource conservation rules, regulations and practices.
- Eradicating marijuana on State-owned lands and forest areas.

Forests and Wildlife Resources and Management

The Division of Forestry and Wildlife (DOFAW) is one of eight line divisions with DLNR and the largest land management entity in the State of Hawaii. DOFAW directly manages approximately 800,000 acres of State trust lands within the Conservation District through a system of forest and natural area reserves, plant and wildlife sanctuaries, and wilderness areas. Responsibilities include statewide programs of watershed protection and management, native and endangered species protection and management, natural area protection, invasive species control, wildland fire suppression, outdoor recreation, game management and commercial forestry. Forestry and wildlife programs are also being planned and implemented on privately owned forest and conservation lands through natural area partnerships, forest stewardship programs, and administration of federal landowner assistance programs.

DOFAW's objectives are:

1. To protect, restore and enhance the condition of Hawaii's forested watersheds, water supply, ecosystems, natural areas, unique native plants and animals, and cultural and geological features for their inherent value to Hawaii's citizens and culture; productive value to science, education and industry; and enrichment of present and future generations.
2. To prevent species extinctions whenever possible.
3. To protect life, property and natural resources by preventing and suppressing wildland fires and invasive species.
4. To develop and maintain a network of hiking trails, access roads, and historic trails; a public hunting program and recreational facilities for public enjoyment, resource management and public safety.
5. To strengthen the economy by producing, improving, and assisting in the production of high quality forest products to support a sustainable forest industry that creates jobs while generating revenue for the State of Hawaii.
6. To inventory, evaluate and document environmental and cultural resources and provide that information to the public.
7. Provide meaningful and productive community involvement in the stewardship of natural resources.

Its priority activities include:

- Promote participation in public and private watershed partnerships on each island.
- Prevent and suppress forest and range fires on key watersheds and wildlands.
- Support statewide and county invasive species coordinating committees to prevent introduction of invasive species and eradicate or control invasive species.
- Control livestock trespass, noxious plants, insects and diseases in watersheds and native habitats.
- Protect and manage native and endangered species habitat on State lands.
- Conduct an aggressive propagation and re-introduction program for threatened and endangered species.
- Develop Safe Harbor Agreements and Habitat Conservation Plans to encourage private landowners to re-introduce or improve habitats for endangered species.
- Survey and monitor status of rare plants and wildlife and monitor effects of management activities.
- Conduct research on native and endangered species and develop new techniques for management.
- Construct, restore and maintain roads and trails, arboreta, picnic and campgrounds, viewpoints, and signs for management access and public use of recreational areas.
- Manage public hunting areas, survey game animals, and conduct public hunts.
- Protect ancient and historic trails and accesses.
- Manage commercial tours on roads and trails.
- Encourage private investment for commercial forest development.
- Plan and administer commercial forestry activities on State land that include resource inventory, sales, and reforestation of commercial forest resources.
- Use commercial activities to salvage hazardous trees along fences, utility and road right-of-ways, and public use facilities.
- Administer State and federal landowner forestry assistance programs (Natural Area Partnership Program (NAPP), Landowner Incentive Program (LIP), Forest Land Enhancement Program (FLEP), Conservation Reserve Enhancement Program (CREP), urban forestry, forest stewardship, and Forest Legacy).
- Operate the Central Tree Nursery in Kamuela and four district nurseries.

Table II-2, following, illustrates the capital investment and operating costs of the Preservation and Enhancement sub-program.

TABLE II-2
INVESTMENT AND OPERATING COSTS AND MEASURES OF EFFECTIVENESS/ACTIVITY
PRESERVATION AND ENHANCEMENT

	F i s c a l Y e a r s							
	Actual 2003-04	Est. 2004-05	Rec. 2005-06	Rec. 2006-07	2007-08	P r o j e c t e d		
						2008-09	2009-10	2010-11
A. <u>Costs of the Recommended Program</u> ^{A/}								
Capital Investment	...	.43	...	...	...	...	...	...
Operating	33.81	37.06	37.16	37.16	37.16	37.16	37.16	37.16
Total	33.81	37.49	37.16	37.16	37.16	37.16	37.16	37.16
B. <u>Selected Measures of Effectiveness/ Activity</u>								
1. Marine protected areas, new or enlarged (acres).	47,600	598,000	598,000	598,000	598,000	598,000	598,000	598,000
2. No. marine & freshwater fishery management areas.	20	21	21	21	21	21	21	21
3. Revenue from sale of forest products.	72,600	100,000	225,000	255,000	335,000	335,000	335,000	335,000
4. Forest & natural area reserves (acres).	686,556	686,556	695,156	695,156	695,156	695,156	695,156	695,156
5. Watershed partnerships (no.)	8	9	10	11	11	11	11	11

^{A/} Expenditures in millions of dollars from all funds.

General Support for Natural Physical Environment

The objective of the Level II program, General Support for Natural Physical Environment, is to enhance program effectiveness and efficiency by providing program direction and general support services.

DLNR and DOH are the organizations involved in the three lowest-level programs which comprise this Level II program. The programs are: LNR-Natural Physical Environment (LNR 906), HTH-Environmental Health Administration (HTH 849), and Policy Development, Coordination and Analysis for the Natural Physical Environment (HTH 850).

Activities performed in the General Support for Natural Physical Environment sub-program are of an administrative nature. They include program planning, developing rules and regulations; coordination of efforts aimed at protecting our environment; policy-making; and other control, service and support activities.

Table II-3, following, shows the operating costs of the General Support for Natural Physical Environment sub-program.

TABLE II-3
INVESTMENT AND OPERATING COSTS
GENERAL SUPPORT FOR NATURAL PHYSICAL ENVIRONMENT

	F i s c a l Y e a r s							
	Actual 2003-04	Est. 2004-05	Rec. 2005-06	Rec. 2006-07	2007-08	P r o j e c t e d		
					2008-09	2009-10	2010-11	
A. <u>Costs of the Recommended Program</u> ^{A/}								
Capital Investment	1.8	4.3	6.0	2.0
Operating	7.8	9.4	9.7	9.7	9.7	9.7	9.7	9.7
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Total	9.6	13.7	15.7	11.7	9.7	9.7	9.7	9.7
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^{A/} Expenditures in millions of dollars from all funds.

III. PROGRAM CHANGE RECOMMENDATIONS

Discussion of Problems/Issues

- To reduce solid waste in the State through recycling, Act 176, SLH 2002, established the Beverage Container Deposit (BCD) program to be administered by DOH and fully operational by January 1, 2005. The program requires consumers to pay a five-cent deposit on a single serve beverage container of 64 ounces or less at the time of purchase, and redeem the full five cents when they return the empty container to a redemption facility.

Budget Actions (Operating and Capital Improvement Program (CIP)) to Address Problems/Issues

- Act 41, SLH 2004, authorized six temporary positions and \$22,026,250 in special funds in FY 05 for the first six months of the program. The operating budget provides refunds to consumers, handling fees to redemption centers, funding for audits, program compliance activities, recycling education and demonstration projects. The Executive Budget for FY 2005-07 provides for the continuance of the six temporary positions and additional special funds of \$22,026,250 in FY 06 and \$30,000,000 in FY 07 to reflect the annual cost for the program.

Program changes included in the biennium budget include:

1. Hawaii Invasive Species Program: Continue and expand programs of the Hawaii Invasive Species Council relating to prevention, response and control, research and technology, and public outreach to prevent the introduction and establishment of new environmental, economic and agricultural pests and maintain and protect native species and habitats and quality of life. Add \$1,000,000 in general funds to the current \$3,000,000 base budget.
2. Forestry Management and Products Development Program Staffing: Add one temporary Forester III to coordinate new private landowner forest restoration programs for the \$15 million U.S. Department of Agriculture (USDA) Farm Bill Conservation Reserve Enhancement Program, \$3 million U.S. Forest Service (USFS) Forest Legacy Program, \$3 million USFS Forest Lands Enhancement Program, and \$1.5 million U.S. Forestry and Wildlife Services (USFWS) Landowner Incentive Programs. The position will provide staff to meet State obligations for program administration, monitoring and reporting. The position

is being funded with an increase in the amount of Conveyance Tax revenues earmarked for this program.

3. Na Ala Hele (NAH) Trails Staffing: Add 3.0 temporary General Laborer positions for the NAH trails and access program to maintain and develop trails, control soil erosion and weeds, maintain safe and scenic trail system for resident and visitor recreation, public safety, and management purposes. Positions are being funded from DLNR's share of Transient Accommodation Tax (TAT) monies in Act 250, SLH 2002.
4. Recreational Hunting Program Staffing: Add 2.5 temporary General Laborer positions for the recreational hunting program to help run hunter programs for the 10,000 licensed hunters statewide on 1,000,000 acres of State managed public hunting areas. Positions maintain and operate hunter checking stations, game feed and water units, fences, signage and provide public safety. Funding provided by hunting license fees.

IV. EMERGING TRENDS, CONDITIONS AND ISSUES

Environmental Management

Public health demands in the 21st century are affected by increased awareness of the environment's impact on individual and community health and are now, since 9/11, sensitized to security threats. Recent amendments to federal laws and rules have advanced a trend in environmental health programs that increases State initiatives, discretion, and flexibility in enforcing environmental laws. Further, environmental laws and dealing with terrorism threats rely more on sound science, public/private partnerships, and common sense. Federal funding is being directed towards those programs that can contribute most to environmental improvements. These trends are reflected in the following changes:

- Pursuant to the federal Clean Air Act and the regional haze regulations, the State is required to identify and address the existing visibility impairments to the two Class 1 areas - the Hawaii Volcanoes National Park and the Haleakala National Park. The State must assess the visibility monitoring data, develop an emissions inventory, conduct an air modeling analysis, prepare a haze control strategy, and adopt a State implementation plan. The task is difficult due to the new subject area and the lack of information and guidance from the U.S. Environmental Protection Agency (EPA).
- Construction projects in or adjacent to waters of the U.S. must obtain a Clean Water Act, Section 404, permit from the U.S. Army Corps of Engineers (COE) and a Section 401 State Water Quality Certification from the Clean Water Branch of DOH. Prior to the start of construction, all permits issued by COE need to be reviewed and certified by DOH that the discharges will comply with the applicable water quality standards.
- The hazardous waste rules are being updated to incorporate by reference, all the federal regulations from 1998 to 2003. In addition, the entire set of State hazardous waste rules are also being incorporated by reference.
- The Hazardous Waste Program is expanding its compliance assistance program by providing on-site audits to small businesses. This is accomplished by the Waste Minimization Coordinator (WMC) who conducts a walk-through compliance audit when invited by a facility. The WMC will then provide a written report to the facility and give them an opportunity to comply, without fear of enforcement. An audit policy is currently being drafted.

- The Safe Drinking Water Branch implements programs and rules mandated by the Safe Drinking Water Act Amendments of 1996. Program areas include homeland security measures; Drinking Water Treatment Revolving Loan Fund (DWTRLF) administration; new water system capacity requirements; existing water system capacity evaluation; consumer confidence reporting; distribution system operator certification program; source water assessment program; groundwater protection program; and underground injection control program that regulates underground disposal of wastewater. Funded by EPA and the State, the DWTRLF provides low-interest loans to qualifying public water systems for improvements and to assure compliance with federal and State laws and rules. These funds support administration of the fund, federal initiatives, small water systems, and new programs in water system capacity and source water protection.
- The Wastewater Branch continues to implement the Water Pollution Control Revolving Fund (WPCRF) Program; review construction plans for wastewater treatment facilities; and administer the training and certification of wastewater treatment system operators. The WPCRF provides low-interest construction loans for wastewater systems. The Wastewater Branch also assists with the financial activities of the DWTRLF. The EPA mandates the perpetuity of both loan programs and provides annual capitalization grants that require 20% State matching funds. This biennium request includes CIP requests to provide the required State matching funds for both the WPCRF and the DWTRLF programs.
- Information management (data and technology systems) is a major focus for improvements in operations. Environmental Management has used an EPA One Stop Grant to develop a five-year plan to identify business process improvement and will begin implementation.

The environmental management programs now involve the regulation of all media areas and require a high degree of complexity of applied sciences involving and sometimes crossing several disciplines. As delegated by the EPA, the State has the authority to exercise discretion and sound science in establishing program requirements. This feature ensures favorable results for the amount of cost incurred by the regulated facilities. As environmental laws and rules change, the State must remain flexible to adjust and comply with these new mandates.

Clean Air Act

The Clean Air Act and the federal regulations and standards continue to have a major impact on the development and direction of Hawaii's air pollution control program. Pursuant to the new Ambient Air Quality Standards for ozone and particulate matter, the State has established and is operating an air monitoring network to determine compliance with the new standards. The State will be adopting the standards once the mainland court challenges and proceedings have been completed. As mentioned earlier, the State is proceeding to address the federal haze regulations, a difficult and large task for the air program. Much time and resources will have to be devoted to this effort. Another program area which is quite controversial is the attempt of recent federal regulations to improve upon the New Source Review Program. Because of impending court challenges to the regulations, the State will await guidance from the EPA before proceeding with any actions. The State air pollution program will continue to evolve in the 21st century.

Clean Water Act

The Clean Water Branch is delegated the authority and mandated by the EPA to implement Section 401, Water Quality Certification, Section 402, National Pollutant Discharge Elimination System, of the Clean Water Act as amended in 1977 and Chapter 342, HRS. The branch also administers a program to reduce polluted run off, also known as Non Point Source Pollution. The challenges to the Clean Water Branch will be the additional workload with limited resources due to new federal requirements. For example, because of federal law changes, the branch now regulates and inspects hundreds more construction sites than before.

State Revolving Fund Programs

To the greatest extent possible, the Wastewater Branch and Safe Drinking Water Branch share expertise and resources to implement two multi-million dollar revolving loan fund programs that are both funded by EPA and require State matching funds in the form of CIP capitalizations. The WPCRF provides low-interest construction loans to the counties in order to construct and/or improve wastewater treatment facilities. An EPA capitalization grant of more than \$10 million annually through the year 2007 requires a 20% State match for which a CIP request is part of this biennium request. The DWTRLF provides low-interest loans for construction, improvement, and technical assistance and training to public and private water system operators statewide. This biennium request includes a CIP request to provide the 20% State match for an EPA capitalization grant of more than \$8 million through the year 2007.

Solid and Hazardous Waste Programs

Since May 2002, the Underground Storage Tank (UST) Program has implemented the field citation program that is similar to a traffic ticket where the inspectors would issue the field citations for easily verifiable and correctable violations. They contain lower penalty amounts than the traditional enforcement tools. To date, DOH has issued 293 field citations. The UST program will be amending the rules to clarify the financial responsibility, the field citation and the release response requirements.

In addition, the Leaking Underground Storage Tank Unit provides regulatory oversight for releases from underground storage tanks.

The department is required to implement the Deposit Beverage Container Law. DOH's FY 05 operating budget included a \$22,026,250 special fund ceiling for the first six months of the program. Act 241, SLH 2004, allows distributors to label and sell containers beginning November 1, 2004. An additional \$8 million special fund ceiling increase is necessary for FY 05 to address the approximately 130 million additional beverage containers that may be redeemed in January 2005.

The operating budget provides refunds for consumers upon return of a deposit beverage container at a redemption facility. Moneys would also be used to pay handling fees to redemption centers, for funding audit and program compliance activities, conducting recycling education and demonstration projects, promoting recycling education and demonstration projects, supporting the transportation of the containers to end-markets, and funding personnel and office expenses. Overall, less than 10% of the operating funds are administrative in nature.

Aquatic Resources

New projects relating to coral reef research and monitoring, management of endangered and threatened species, Northwestern Hawaiian Island ecosystem reserve, and aquatic invasive and alien species prevention and control, are examples that provide protection and enhancement of our aquatic resources and justifies increased support for the program.

Assessment of the health of our fishery stocks through periodic monitoring, continuous use and maintenance of the Division of Aquatic Resources' (DAR) hatchery to culture and develop certain marine fish species (moi, mullet, papio, etc.), support of research to assess commercially-valuable bottomfish species, and participation in federal fishery management are highlights of the program's role in Hawaii's commercial fishing industry.

The continued popularity of the Kokee (Kauai), Waiakea (Hilo) Nuuanu (Honolulu), and Wahiawa (Lake Wilson) public fishing areas and development of the soon-to-be-established Wailua reservoir on the island of Kauai warrant additional support to manage and operate these popular recreational fishing areas.

Hawaii's concern for and sensitivity to the aquatic environment is evidence of our high regard for the value of those resources. Balancing this is the need to use these resources to accommodate an increasing human population and robust economic growth which places unrelenting pressures on our fishery resources and habitats. Ever increasing resident and activity-oriented visitor populations, development of coastal lands, increasing affluence and leisure time, technological advances, and growing competition among users of aquatic habitats, continue to increase pressures on fishery stocks placing certain resources at risk of over-fishing and depletion.

Growing competition between recreational and commercial fishing is seen as favoring the sportsman over the commercial fisherman. This means that the program's role in managing these competing uses will shift from one of resource management to include more resource user management. The users used to be fishermen but this is changing to both fishermen and non-fishermen. To enable DAR to fulfill this role, staff that were traditionally trained only in biological sciences must now be trained in social sciences and economics. Training in the social sciences, which include conflict resolution, resource allocation, and process management, will prepare DAR to act as a "resource mediator" to better serve competing users while still conserving the State's natural resources.

The future trend in fisheries management includes an increasing need for recreational fishing opportunities. With an expanding economy, increase in leisure time, and an interest in outdoor activities, recreational fishing could become an important revenue generator for the State. Currently, the program's plans on recreational fishing are being developed and could be uniquely positioned to take advantage of this situation.

Alien species whether intentionally or unintentionally introduced to Hawaii waters, pose a constant threat to our native ecosystems. Giant Salvinia, or water fern dominated the surface waters of Lake Wilson, and diverted over a million dollars, and tasked many county, State, and federal agencies with its eradication. Similar potential situations exist in the marine environment as an introduced soft coral has threatened to overtake both shallow water and deepwater ecosystems and to lower the qualities of the natural environment. Shallow water domination by introduced marine seaweeds serves to degrade the quality of the marine environment affecting our resident and visitors concept of those qualities they have come to expect to see. These alien introductions may be better managed and controlled with establishment of regulations and a formal program, including monitoring procedures for a long-term effort to effectively stop accidental introductions of alien species from hull fouling and ballast water discharges by ocean-going vessels. Continuing and even greater efforts must be expended in order to avert these threats.

Federal interest in State operations continue to tax program budget and manpower with administering federal fisheries disaster relief funds (to assist fishermen affected by federal regulations), application of permit conditions that require the State to monitor its take of threatened species such as sea turtles and monk seals by fishing activities, and establishment of a recreational fishing license to monitor fishing effort.

Continuing interest in and progress toward Hawaiian sovereignty has also raised issues of "native rights" and the right to have access to Hawaii's natural resources. Community interest is growing in terms of having an increased number of marine protected areas (low or no take zones), and active participation in the management process.

The majority of reductions imposed on DAR over the years has resulted in much sacrifice in the quality of the program, yet does not compensate for the ever-increasing role of the program. The prospect of future level funding may significantly impact the program's ability to provide even adequate support for many of its environmentally sensitive and diverse projects.

Budget and manpower reductions will hamper protection of the environment, timely attention to managing resources for commercial fishing, and maintenance of marine and freshwater fishing opportunities and required assessment of relationships in freshwater and marine ecosystems. The program needs the agreement and concurrence of State government, the Legislature, and the people of Hawaii of the fact that adequate support to managing Hawaii's aquatic resources and their ecosystems is the most cost-effective means to sustain them.

Management Issues:

1. Protection and Management of Hawaii's Forest Watersheds:
The forested watersheds of the State are the basis of our environment, economy and quality of life. Watersheds produce hundreds of billions of gallons of fresh water annually for domestic, agricultural, and industrial use. Noxious weeds such as Miconia, are invading our mountain watersheds, feral animals are degrading habitat needed for protection and restoration of native and endangered species, and increased demands for forest recreational put pressure on forest roads and trails. A significant public investment in watershed management is needed to meet the community's demand for water resources and attendant watershed values provided by our forests. Because private landowners own half of the remaining forested lands in Hawaii, incentives are needed for private landowners to invest in managing their forested watershed.

Our forefathers recognized the need to assure a healthy and effectively managed forest watershed and came together in the late 1880's to make the needed investments and establish the basic network of forest reserves we see today. We need to carry on that task and assure we will have an effective forest watershed for future generations. One way this is being accomplished is through the development and expansion of public and private watershed partnerships throughout the State. Hawaii is a national leader in this endeavor with approximately one-fourth of the State enrolled in watershed partnerships. These partnerships are putting up fences, removing feral animals, and predators. With the addition of new partnerships on Kauai, partnerships now number nine and span over 850,000 acres on the five islands. They represent the most effective and significant landscape level cooperation and management actions ongoing in the State. They need sustained funding, which currently comes from the conveyances tax through the Natural Area Reserve Special Fund. The State funds invested are typically used to match federal grants, doubling the effectiveness of this program.

2. Invasive Species: The silent invasion of Hawaii by insects, disease organisms, snakes, weeds, and other pests is the single greatest threat to Hawaii's economy and natural environment and the health and lifestyle of Hawaii's people. Invasive pests already cause millions of dollars of crop losses, the extinction of native species, the destruction of native forests, and the spread of disease. But many more harmful pests now threaten to invade Hawaii and wreak further damage. Even one new pest like the brown tree snake or the red imported fire ant could change the character of our islands. Stopping the influx of new pests and containing their spread is essential to Hawaii's future well being. One of the most cost-effective solutions to this problem is to find and eradicate these species before they proliferate beyond control. This avoids the damage costs created by the pests themselves as well as the costs of perpetual pest control and mitigation.

Act 85, SLH 2003, established the Hawaii Invasive Species Council to foster and organize coordinated approaches among various executive departments, federal agencies, and international and local initiatives for the prevention and control of invasive species; and to affirm the objective of the State to rid Hawaii of invasive species. Last year, \$3,000,000 in State funds were provided for a one year pilot project to provide support for the operations of the Hawaii Invasive Species Council (HISC) to develop, and implement a partnership of federal, State, county, and private entities for a comprehensive statewide invasive species prevention, response and control program, research and technology program and a public outreach effort. The State dollars invested are being matched (1:1) by non-State dollars or equivalent in-kind services.

The Administration is requesting an increase of \$1,000,000 to expand this program. The funds will be used for: 1) prevention (35%) - to increase numbers of and training for quarantine staff; support specialists to identify new insects, plants and diseases and provide technicians/supervisors and needed infrastructure to lead invasive species control efforts on the ground; 2) response and control (30%) - to support the four island Invasive Species Committees in each county and continue the pilot marine response program being developed by DAR; 3) research and applied technology (30%) - development of biological control, more effective survey and detection methods, and matching grants to private and university; and 4) public outreach (5%) - to increase voluntary compliance of quarantine laws, avoid accidental introductions of invasive species, and establishing an effective pest hotline that delivers timely information to managers on the ground.

3. Fire Protection and Management: DOFAW does not have the resources to carry out its mandated mission of fire protection, despite existing and increasing risks to public health, safety, and the environment from the affects of wildland fire. There is a lack of public investment for fire prevention (information and education) and presuppression (training and maintenance); thus, increasing risks and costs of the inevitable wildland fires that will occur in the future. With previous budget cuts over the past ten years, DOFAW has lost numerous positions, many in field crews that fight fires. The division now has difficulty fielding a full crew for fire fighting in Kauai and Maui County. Although DOFAW has training and technical expertise to suppress wildland fires, it is not a full-time firefighting agency, and does not have the resources to participate in all wildfire suppression activities outside its jurisdiction.

In addition, DOFAW is being called upon to provide training and support for emergency response management to bolster the State's capabilities for homeland security. Providing for public health and safety when extreme burning conditions and other emergencies occur is a priority. As the only State firefighting agency, we have responsibility to assist the State Civil Defense Agency when called upon, even when it impacts our other operational programs. Prior year reductions have hampered and limited the programs ability to fight fire and respond to other emergencies. An adequate investment in fire fighting capability is needed to protect public health and safety.

4. Endangered Species Recovery: DLNR continued to make progress developing new partnerships and improving techniques for restoring endangered plant and wildlife populations. The department has entered four Safe Harbor Agreements to benefit nene and waterbirds. Eleven more are in development to enhance endangered waterbird habitat on Oahu, Maui and Hawaii, enhance nene habitat on Hawaii, restore forest bird habitat on Hawaii, and restore endangered plants on Oahu. The department continues to make progress with endangered bird restoration through its partnership with the San Diego Zoo to operate the Maui Bird Conservation Center at Olinda. One issue that will be decided in the upcoming year is the fate of the Poo`uli - the most endangered bird in the world. One male that was captured last September to establish a captive breeding population has died in captivity from a combination of old age and the stress of captivity. Two birds remain in the wild and efforts to capture and bring them into captivity continue. These birds have not been seen for many

months. An interagency team of ornithologists, the Natural Area Reserves System (NARS) managers, and aviculturists will continue to try and save this species but its future is uncertain at this point.

Program accomplishments include the release of 17 captive bred endangered Small Kauai Thrush into the State Alakai Wilderness Area, release of 10 endangered captive bred Palila into protected habitat on Mauna Kea State Forest Reserve, release of 10 endangered captive bred nene into Hawaii Volcanoes National Park, release of 12 endangered captive bred nene onto private lands under Safe Harbor Agreements, produced 26 nene, 19 Puaiohi, 10 Alala, 2 Maui Parrotbill and 6 Palila in the captive breeding program, production and outplanting of over 9,000 individuals of 300 species of rare or endangered plants, the operation of 5 mid-elevation plant nurseries to propagate endangered plants, development of micro-propagation facilities for seed storage and test-tube propagation of the rarest of rare endangered plants from throughout the State, operation of 2 predator free sanctuaries for endangered tree snails on Oahu, predator and weed control on 5-offshore islands and 4-waterbird sanctuaries on Oahu and in 2-endangered seabird nesting colonies on Kauai, predator control in nesting areas of endangered Oahu Elepaio and fencing to control feral animals and protect endangered species and their habitat in Natural Area Reserves, forest reserves and wildlife sanctuaries. Resources to protect and manage listed and candidate endangered plants and wildlife are insufficient. Preserving these resources takes active management to maintain the status quo.

5. Management of Natural Areas: NARS currently consists of 19 reserves, comprising 109,204 acres. Within NARS is one of the greatest concentration of protected biological diversity in the nation, including 75% of Hawaii's native plants and 65% of Hawaii's rarest forest birds. Nearly all the reserves have some degree of destructive infestation by non-native plants and animals. Budget reductions have reduced the capacity of NARS managers to pro-actively tackle these threats. Educational and volunteer utilization programs ensure long-term support, as well as provide a significant work force for conservation management. To meet this objective, NARS administers and supports volunteerism, particularly the Youth Conservation Corp (YCC) and Americorp Intern Programs. Through YCC and Americorp Programs, selected local high school and college age youth and young adults are given an opportunity to learn outdoor skills, teamwork and the satisfaction gained in working hard to protect the natural heritage of their islands. YCC will serve 80 students and Americorp 12 interns. Although listed in several surveys as the top priority in

protecting Hawaii's natural resources, environmental education continues to receive sparse funding in spite of successes with YCC, Americorp and environmental education initiatives.

NAPP is special funded from a portion of the conveyance tax that is levied each time real estate property is bought or sold. It provides matching State funds with private funds (2:1 match) to ensure preservation of high-quality natural areas found in private ownership. There are currently 7 cooperative projects protecting over 25,000 acres. NAPP compliments NARS by leveraging State funds with private resources and protecting native resources and species that are not protected elsewhere. Management activities on these projects are similar to those in NARS. An added benefit of NAPP funding is to provide a State cost-share for the partnerships to aggressively pursue federal watershed and conservation grants.

The Natural Area Reserve Special Fund provides a major source of funding for watershed partnerships and watershed management on State lands. This fund provides a significant source of State-match for federal grants available for these programs. Revenue into the fund comes from the conveyance tax on real estate sales and has been at record highs over the past two years because of the booming real estate market. Revenues are expected to drop as the real estate market cools. The temporary surplus built up at this time should provide a reliable source of funding to support higher initial investment costs in fence building, ungulate control and operations that new partnerships require.

6. Management of the Hunting Program: DLNR manages the hunting program on about 1,000,000 acres of State and private lands throughout the State that provides recreational and subsistence hunting to approximately 10,000 licensed hunters. Hawaii is one of the few states in the nation where all game birds and mammals that the public hunts are non-native. There has been a long history of the need to control these game mammals (e.g., goats, sheep, deer) to protect forested watersheds and native ecosystems. The maintenance of a viable public hunting program is essential to avoid costly government intervention. Yet there continues to be controversy over the appropriate balance between control of game mammals, and local communities who desire sustainable game populations to hunt on public lands. This has been especially true on the island of Hawaii, where subsistence hunting is increasing as a result of the poor economy. Research is urgently needed to establish a middle ground to determine a level of game mammals that can be maintained without losing native resource values.

State support will be needed to conduct habitat conservation planning to conserve endangered species and manage game and other recreational uses in many multiple use areas in the State.

Hawaii hunters harvest over 11,378 game animals and participated in 30,690 hunting trips on public hunting areas. The department sold 9,095 hunting licenses last year and collected \$345,000 in hunting fee revenue that was deposited into the Wildlife Revolving Fund. The Administration is requesting 2.5 new Temporary General Labor I positions for the hunting program on West Hawaii (1.0), East Hawaii (0.5) and Oahu (1.0). The positions provide field work to build and maintain hunter checking stations, hunter access roads, boundary fences and signs on existing public hunting areas and in any newly opened areas. The positions provide information to the public on hunting opportunities at hunter checking stations and perform public safety duties with immediate response to fire, injury or report of lost hunters and hikers. The positions are funded out of the Wildlife Revolving Fund with fees generated from the sale of hunting licenses and tags. The positions will provide a return of services back to the fee paying hunting public.

7. NAH Trails and Access Program: Currently, there are approximately 580 miles of multiple use trails and access roads that are under DOFAW jurisdiction and management, with support provided by the NAH program. There is increasing demand by off-road motorized recreational users for trails that can accommodate motorcycles and all-terrain vehicles. There is a growing interest in trails by the visitor industry. For example, there are currently 36 permitted trail tour companies in operation around the State, with 7 of these companies from the continental U.S. In recognition of this relationship, Act 250, SLH 2002, allocates a portion of the TAT (\$100,000), via the Hawaii Tourism Authority, to the NAH program. This funding is being applied to add three Temporary General Labor I positions for the islands of Kauai, Maui and Oahu, to assist NAH personnel in maintenance of trails frequented by visitors and commercial operators. TAT funding is significant, in that it acknowledges the relationship between tourism and its impact on recreational features under DLNR jurisdiction.

The NAH program also maintains the ancient and historic trail inventory that involves database management, policy development, and maintenance and protection of trails on DOFAW lands. This also involves coordination with DLNR Land and Historic Preservation Division and the National Park Service for development of the Ala Kahakai National Historic Trail on Hawaii, and private landowners with

historic trails on their property. There has been an increase in public demand to protect and maintain historic trails and an increase in legal questions regarding the affect on private property interests. Claiming public trails through private property has resulted in litigation. NAH has had to pay settlement costs in the past relating to court decisions reducing operational funds that could be used for trail maintenance activities.

Due to recent court decisions relating to public land liability, the Legislature passed Act 82, SLH 2002, relating to development of environmental warning signage. Prototype warning signs have been designed, and administrative rules relating to the design and placement are being promulgated. Act 82 is significant in that it strikes a balance between government's duty to warn and recreational users assuming personal responsibility. There has been considerable effort put forth by DLNR in evaluating dangerous environmental conditions on trails and identifying placement of signs and development risk management policy. Public health and safety will be enhanced by these efforts.

8. Commercial Forestry and Private Landowner Assistance Programs: Commercial forestry opportunities are being expanded throughout the State. Current projects include letting of a timber license with Tradewinds Forest Products, in Waiakea, Hawaii; extraction of timber resources concurrent with fence line maintenance on Hawaii; development of Kokee Timber Management Area on Kauai; and koa canoe log management at Kapapala (Kau). Tradewinds Forest Products projects that they will have a new mill facility constructed and active commercial forestry operations by approximately July 2007. DLNR is promulgating rules that will increase fees for small scale commercial harvest permits for salvage and small commercial operations. The revenue will be deposited into the Forest Stewardship Special fund for management of forest reserves and commercial forestry. Revenue from sale of these small scale commercial harvest permits is expected to increase revenue into the special fund slightly during FY 06. Revenue from large scale commercial timber licenses is not expected to become available until FY 07 and FY 08.

Landowner assistance programs to reforest private lands are expanding under the Forest Legacy, FLEP, and CREP. CREP could provide up to \$10,000,000/year for five years if fully implemented. Income caps (adjusted growth income) may limit implementation of the CREP program for landowners in Hawaii. Other landowner assistance programs include the USFS Forest Legacy Program, FLEP, and LIP and could provide an additional federal funding

to forest landowners for implementing cost-share conservation projects. The administration has requested adding one temporary Forester III position to coordinate these new forest restoration programs. Many of these require State involvement to administer the program, process funding, monitor performance and report accomplishments. The new position will provide staff to meet State obligations for program administration and help meet State match requirements.

Water Use Regulation and Management

Water use regulation and management are necessary to protect Hawaii's limited water resources from depletion and contamination and to insure uninterrupted supplies for all uses of water. The State Water Code (Water Code) requires that the Commission on Water Resource Management (Commission) regulate ground water use and surface water use. Water uses are currently being inventoried and effects upon the resource are being monitored to protect and prevent any degradation of ground and surface water sources. Areas where the Commission has determined that availability and utility of the resource are threatened are designated as water management areas to allow development and use of the resource therein to be administratively regulated.

Currently, Oahu (except for the Waianae area), Molokai, and the Iao Aquifer System Area (Maui) have been designated ground water management areas. Existing uses in the Iao Ground Water Management Area have yet to be established and are currently going through the water use permit process. Future uses for Iao will be addressed once existing uses are established. The very recent Hawaii Supreme Court decisions on the Waiahole and Waiola contested case hearings have also changed and complicated the criteria and burden of proof responsibility, which affects and requires updates to the water use permit process. Pending designation of ground water management areas include the Waihee Aquifer System Area (Maui) and Lanai.

The Hawaii Well Construction and Pump Installation Standards were updated in 2004 with significant changes. The well construction and pump installation permit process has subsequently been updated to incorporate such changes and to clarify roles and responsibilities between well owners, landowners, and contractors involved. Penalty and enforcement policies are also under review given changes in construction standards, Supreme Court decisions, and updates to the permitting process.

The Water Code mandates a statewide instream use protection program to include establishing interim and permanent instream flow standards for streams, regulating stream channel alterations and surface water diversion works, and expanding collection of instream use data statewide.

The Commission convened a series of Stream Policy Working Group meetings in 2004, made up of various stakeholders. The Group was asked to provide input into design of a "wild and scenic river system" to identify appropriate streams for a higher level of protection. Following extensive discussions, a majority of the Group agreed that the vehicle for achieving stream protection throughout Hawaii should be via establishment of instream flow standards statewide. The Group continued to provide assistance in defining the various components that should be considered in developing an instream flow standard methodology.

Incorporating comments and information gained through the Stream Policy Working Group, the Commission has outlined a long-range Program Implementation Plan. The plan, to be implemented in a four-phase approach, shall: 1) improve the organization and management of information; 2) analyze and develop informational resources to provide for database and mapping capabilities, while defining an instream flow standard methodology; 3) coordinate additional information efforts, including, but not limited to, field investigations, cooperative data collection, and initiation of additional studies; and 4) develop an information and education program to provide for website development, distribution of information, coordinated public programs, and implementation of instream flow standards. The Program Implementation Plan is a key step in implementing the overall goals of the Commission by identifying milestones that the Commission must meet to move effectively towards setting instream flow standards.

Drinking water remains the most important natural resource in the State. The protection and preservation of this precious resource is directly linked to the health, welfare, and quality of life for all residents of the State. Other issues facing the Commission include: 1) sustainability of surface and ground water resources; 2) development of alternative sources of water; 3) conflicting objectives for use and protection of our water resources; and 4) need for a comprehensive/integrated plan to address water-related issues and resource protection. The Water Code mandates the Commission to implement and utilize comprehensive water resources planning in its regulation and management of our State's water resources by way of the Hawaii Water Plan (HWP) in order to address problems of supply and conservation of water.

Accordingly, HWP serves as a continuing long-range guide for water resource management. To fulfill this mandate, HWP must be reviewed and updated on a regular basis to provide for an accurate and effective framework for water resource management. The Commission will continue to seek appropriate resources to update priority components of HWP, including, but not limited to, the Water Resource Protection Plan and the

State Water Projects Plan. The Commission will also continue its efforts to facilitate completion of the Agricultural Water Use and Development Plan and updating the Hawaii Drought Plan.

As competition for Hawaii's water resources increases, it is even more critical that adequate data be available for decision-making about availability and prudent use of our resources, in spite of limited staff and funding to undertake the collection. These data can be correlated or analyzed separately to provide an understanding of the water resources within a particular area, and are also used when the sustainable yield estimates are reviewed and updated. Some areas within the State require more emphasis on data collection due to issues dealing with the quantity and quality of water available for use. In order to effectively deal with these concerns with a limited staff and budget, the Commission has prioritized long-term baseline hydrologic data collection to regions where data are sparse or where development pressures will have a measurable impact on the ground water resources.

Currently, the Commission owns eight deep monitor wells (four on Oahu, two on Maui, and two on Hawaii, with four new wells (two on Oahu and two on Maui) being drilled. These specialized wells are drilled deep enough to penetrate the fresh ground-water zone into salt water below to monitor the thickness of fresh water, track the location (elevation below sea level) of the 50% fresh water/salt water concentration, and to relate behavior of the aquifer to the amount of water pumped from the aquifer. Data from these wells help to better reevaluate and estimate the sustainable yield of an aquifer.

In addition, the Commission currently has a cooperative agreement with the United States Geological Survey for a statewide basic hydrologic data collection program. This includes surface water (stream gauges), ground water (water levels and water chemistry), and rainfall data collection networks. Data collected through this program provide long-term hydrologic data for statistical analysis of stream flow, and trends in water levels in aquifers and climatic conditions statewide. The Commission is exploring ways that this program can be upgraded to include more stream gauging and construction of climate stations within critical watersheds.

V. SELECTED PROBLEMS FOR POSSIBLE STUDY

In Section IV above, background information was presented on a number of problems and issues in the Environmental Protection program. The study of these problems and issues should lead to alternative courses of action that will significantly increase the effectiveness of the program.